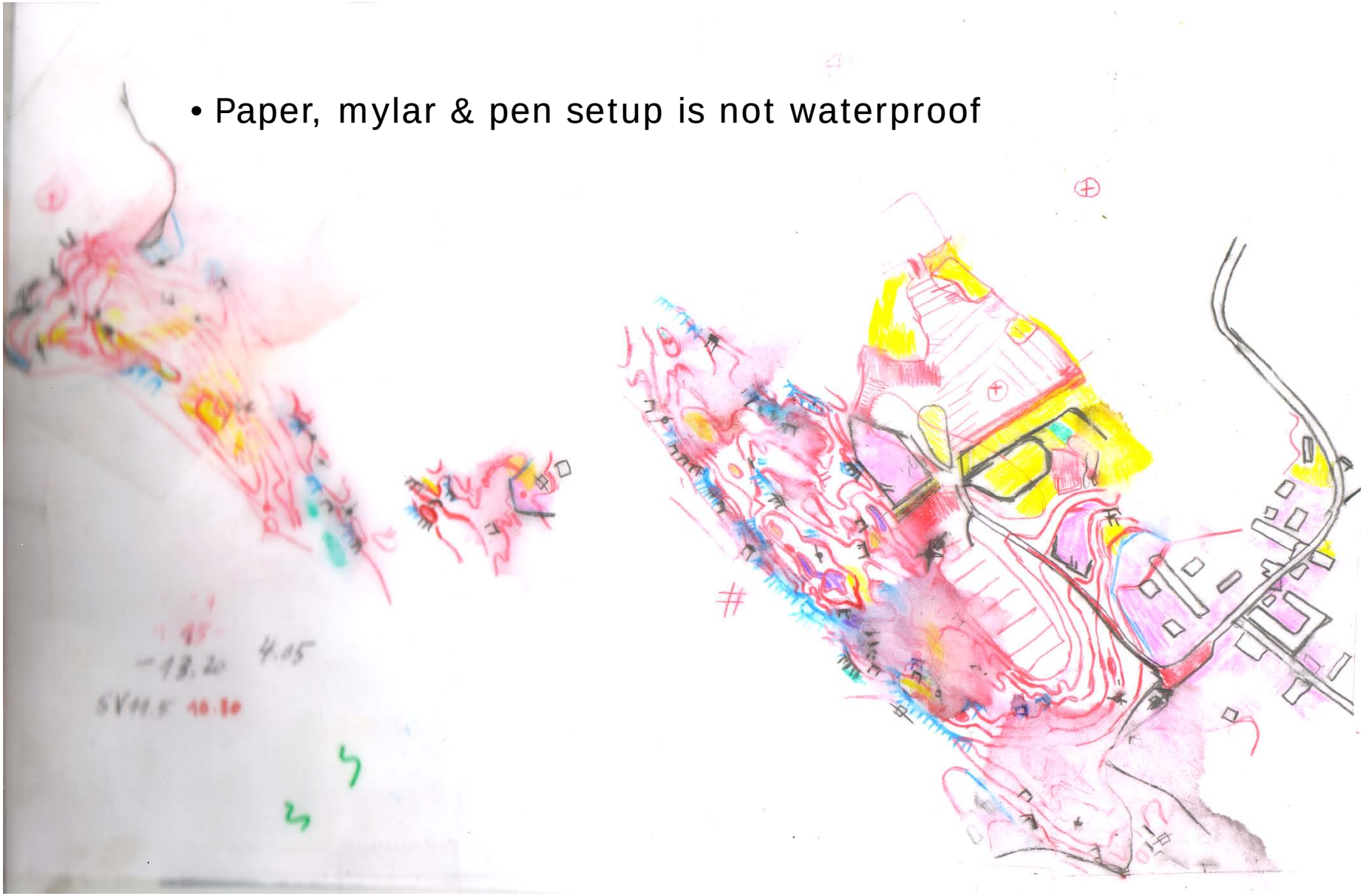
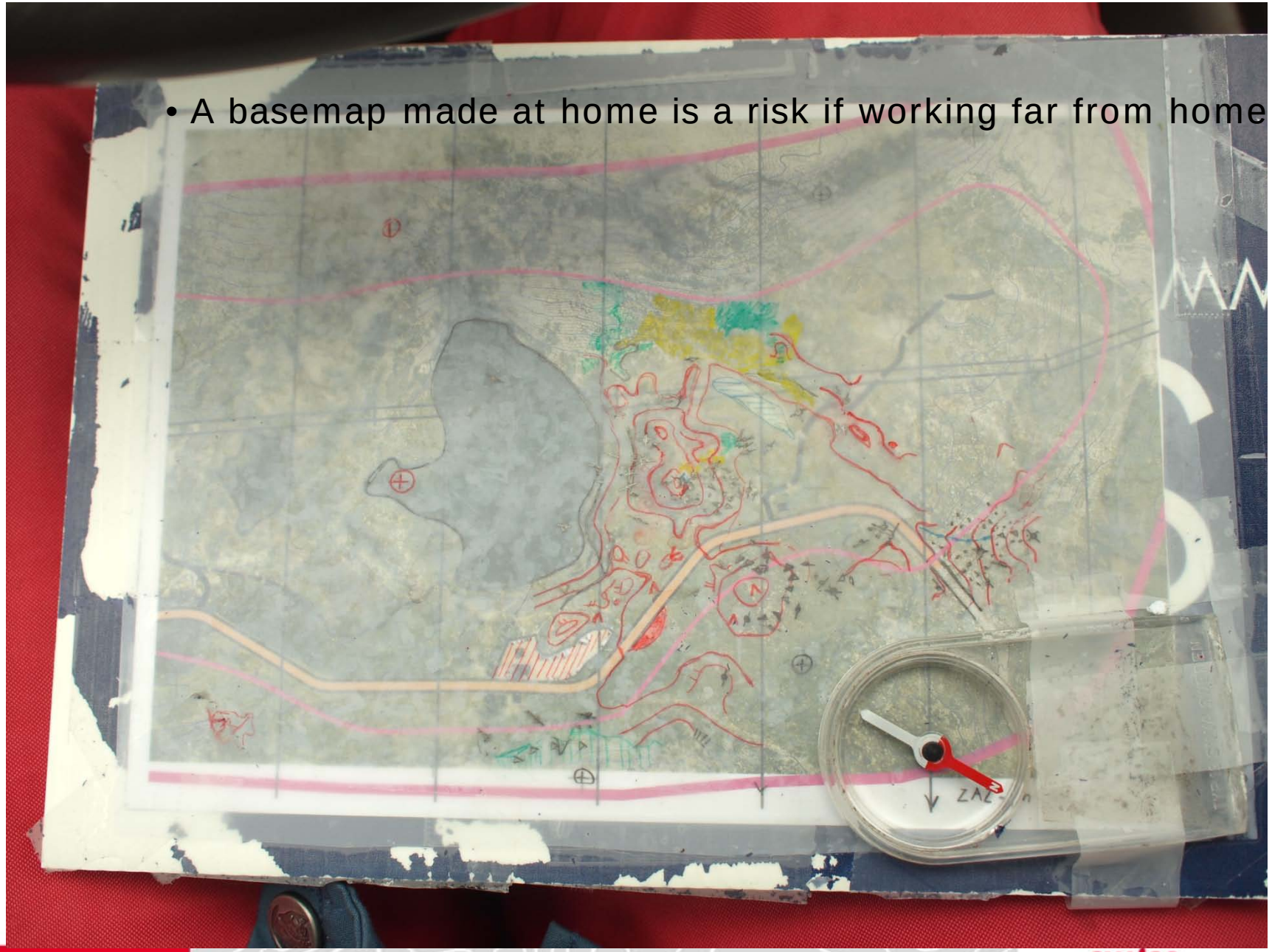
Fieldwork with Open Orienteering Mapper

- A day in october 2014
- Far from home on Julierpass
- Weather forecast: dry

- Paper, mylar & pen setup is not waterproof



swiss orienteering


• A basemap made at home is a risk if working far from home

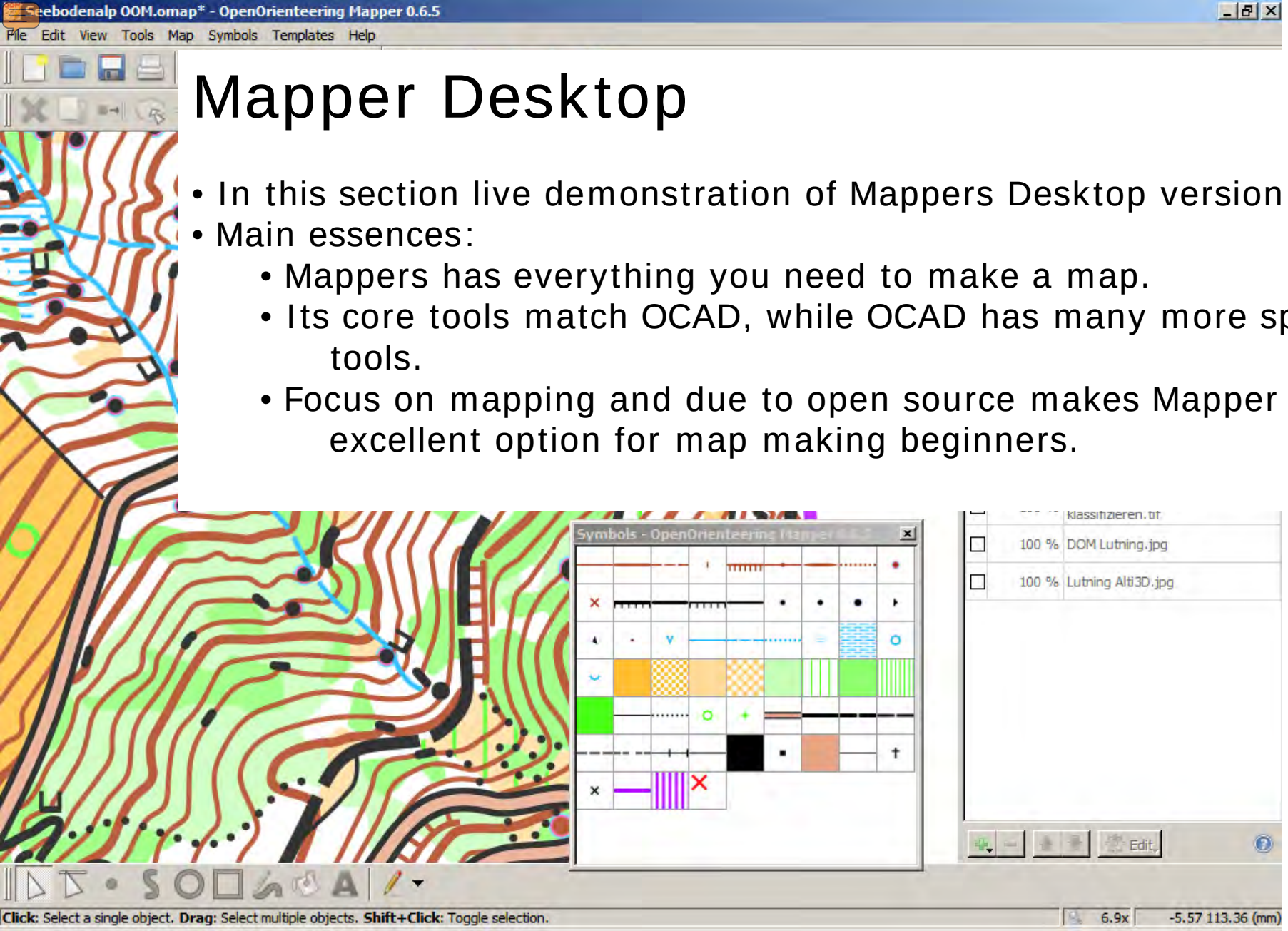
- That is why I decided to test a digital setup
- Because of the high costs for OCAD on a rugged tablet pc I wanted to try Open Orienteering Mapper first and stuck with it.
- Working two seasons with this digital setup it is time to share some experiences.

Open Orienteering Mapper

- Part of the Open Orienteering suite, called Mapper
- Open source project founded by the german Thomas Schöps in 2012
- Open source: You can participate as
  - Software developper
  - Translator
  - User: bugreporting and making proposals for further improvements
- Thus it is free
- Version 0.6.6.
- Runs on different OS: packages for Windows, Mac, Linux and Android
- Download http://www.openorienteering.org

Mapper Desktop

- In this section live demonstration of Mappers Desktop version
- Main essences:
  - Mappers has everything you need to make a map.
  - Its core tools match OCAD, while OCAD has many more specifi tools.
  - Focus on mapping and due to open source makes Mapper an excellent option for map making beginners.



Mapper Desktop

- Picture taken from a map making workshop in Czech Republic
- 50% of the participants worked with Mapper

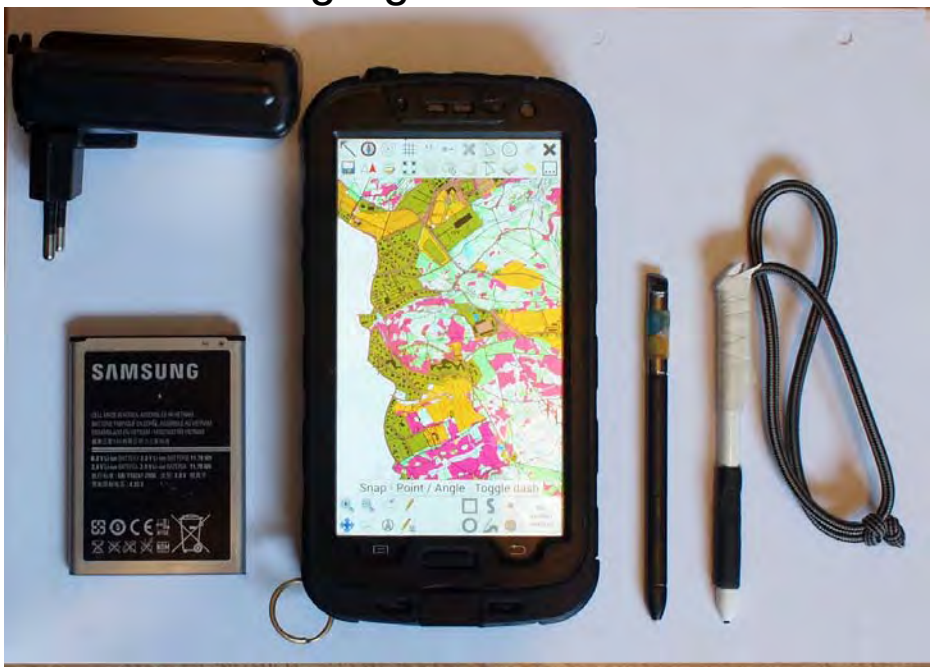
Mapper Android

- The Android Version of Mapper is reduced to the needs of fieldwork
- The field project has to be prepared on the Desktop Version before being transfered to the phone.

Setup for fieldwork with Mapper

- An Andoid phone, might be ”old”/second hand with some sort of intrinsic pen technology
- f.ex. Samsung Galaxy Note 2
- replacement battery for battery exchange under the field day
  - an estimated total of 6000mAh per day
- replacement pen
- battery charger for simultaneous charging of both batteries

- Overall weight 250g
- Overall cost 200 CHF



Aspects of digital field work with Mapper

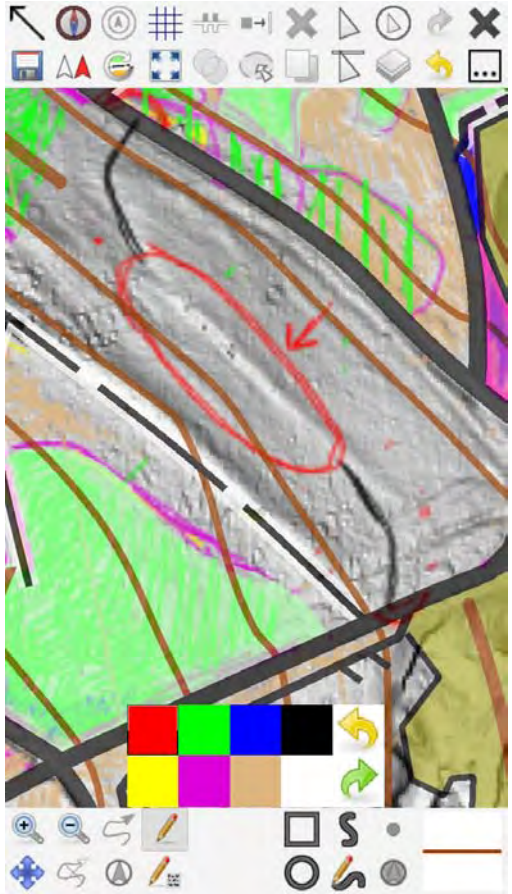
Localisation

- The proper workflow for mapping is
  terrain -> mapping decision -> localisation -> cartography
- No mapping before terrain proof
- SITUATIVE BASEMAP: take all base maps into the terrain.
  Choose the best base map fitting bestfor the actual situation

- In this section: Live demonstration on using situative basemap
  See screenshots on the next page

Localisation

- Screenshots of live section showing the localisation of a ride
  Switching between: Vegetation height, relief shade and coniferous forest.

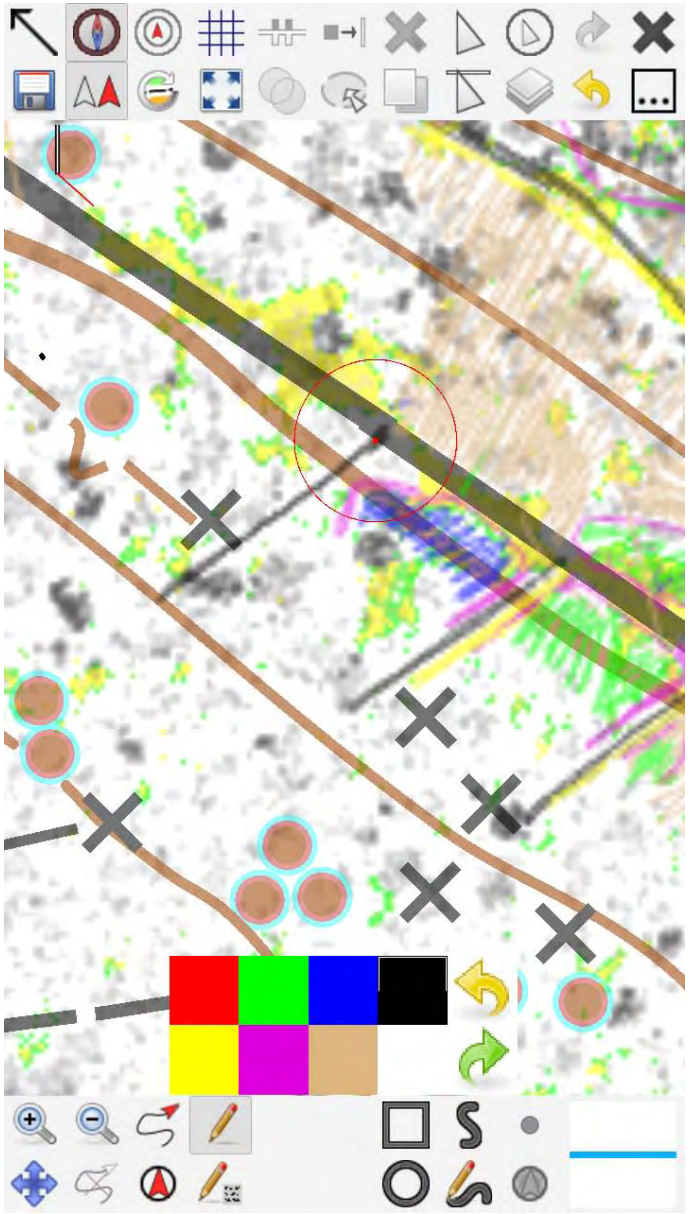


Localisation GPS

- Additional aid by internal or external GPS conected by Bluetooth

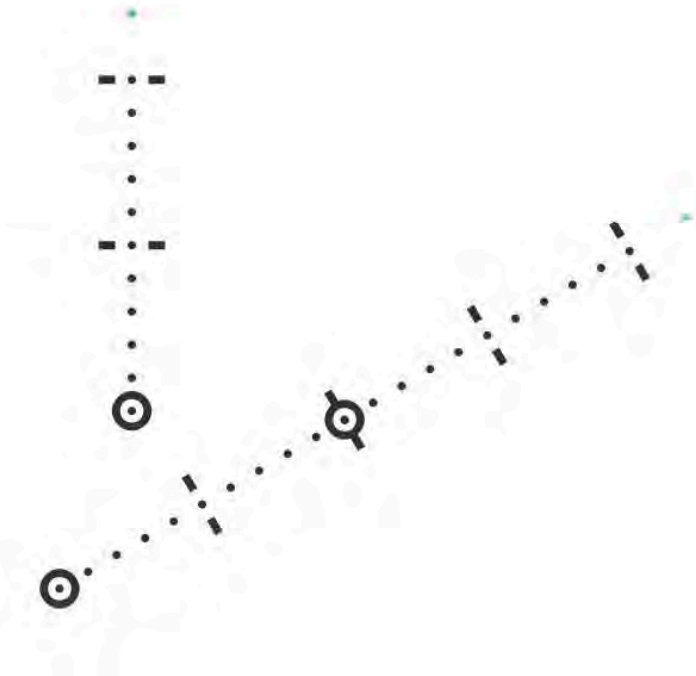
Localisation GPS

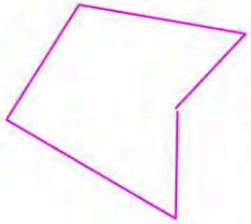
- Representation on the screen
- Dot for location
- Ring for accuracy
- I almost never use GPS as sole location information

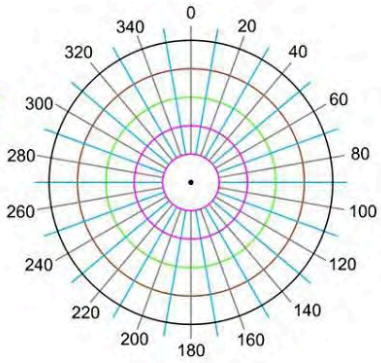


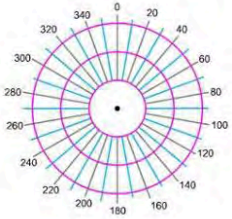
Localisation Range finder

- Rarely used in Switzerland, though useful and accurate tool in lack of modern LIDAR data
- Transfered to Mapper with accurate helper symbol







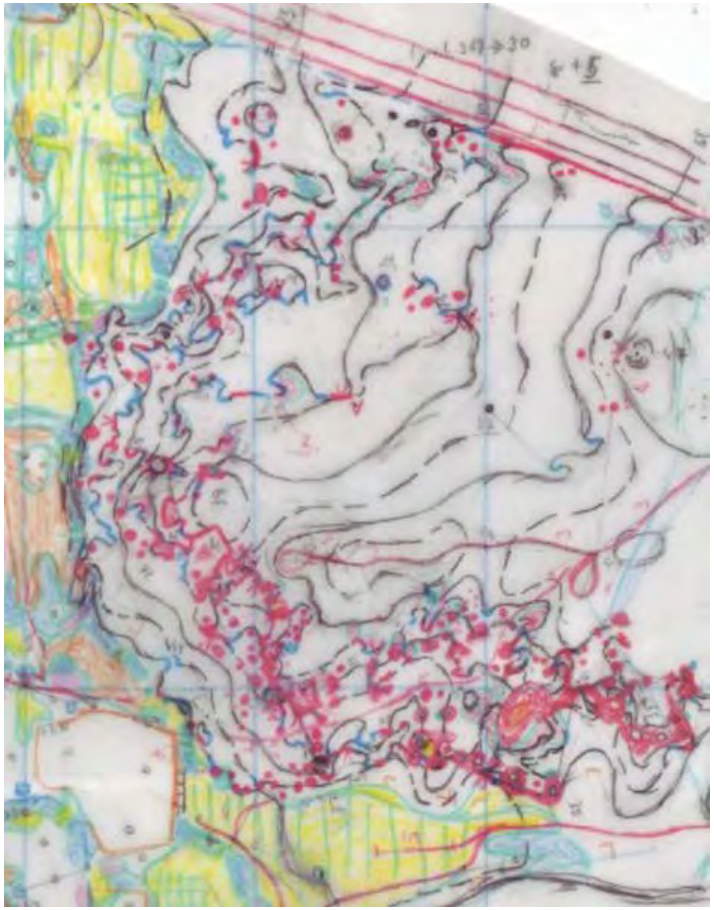


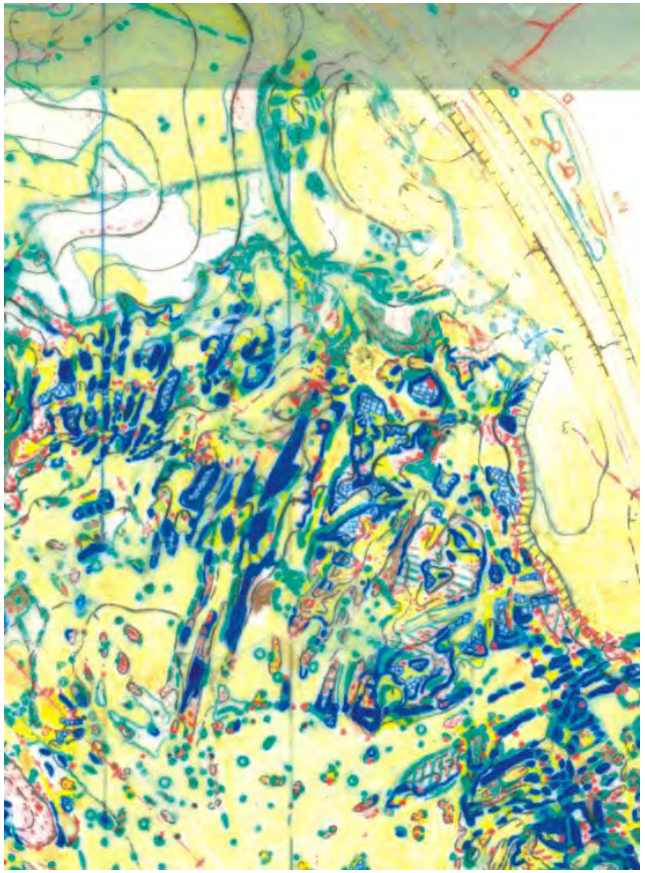
Localisation Range finder

- Usage example, measuring height and horizontal distance between a pair of stones

On site cartography

- Even very accurate field notes embody a certain loss of information

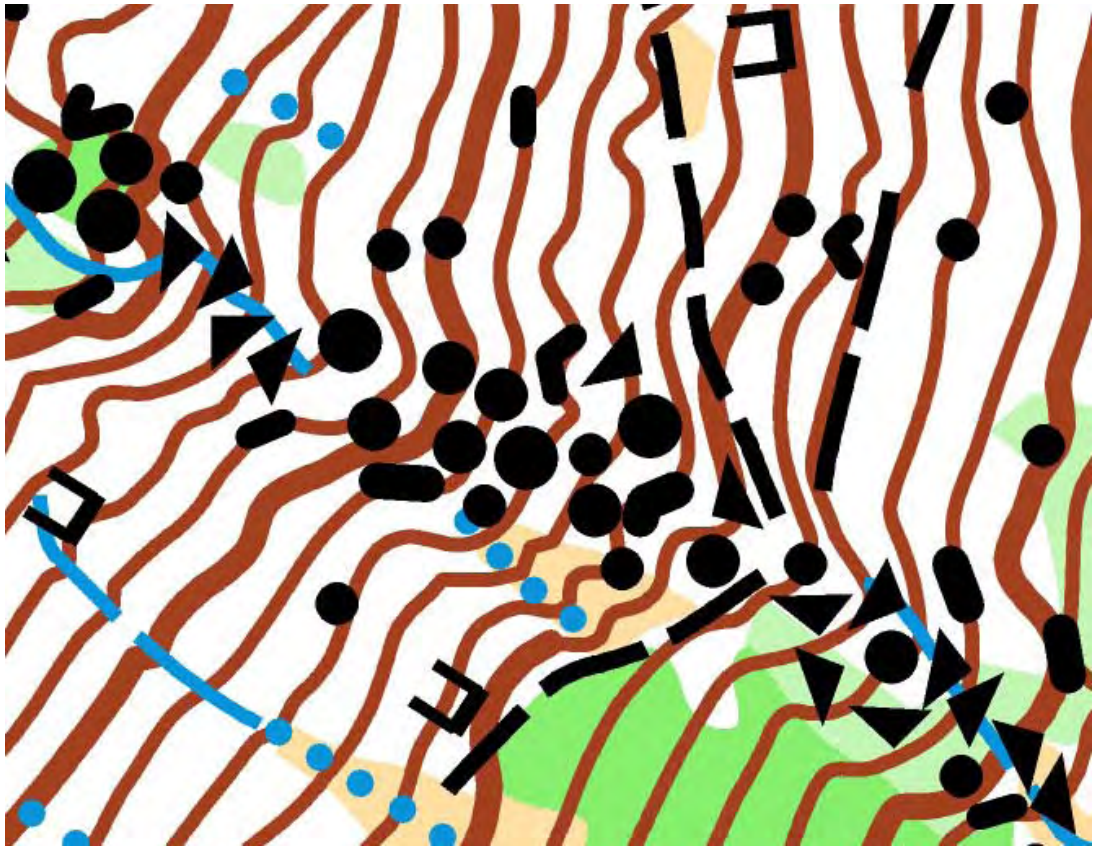




Examples by Drbal and Lenhart

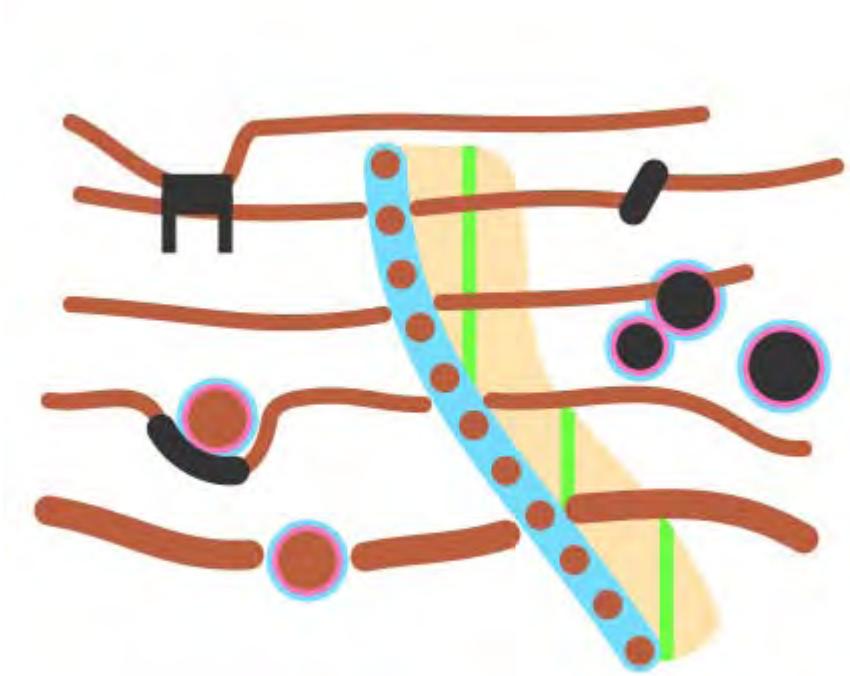
On site cartography

- The loss of fixed scale of the field note gets unwinded by the strict footprint conservation due using final symbols.



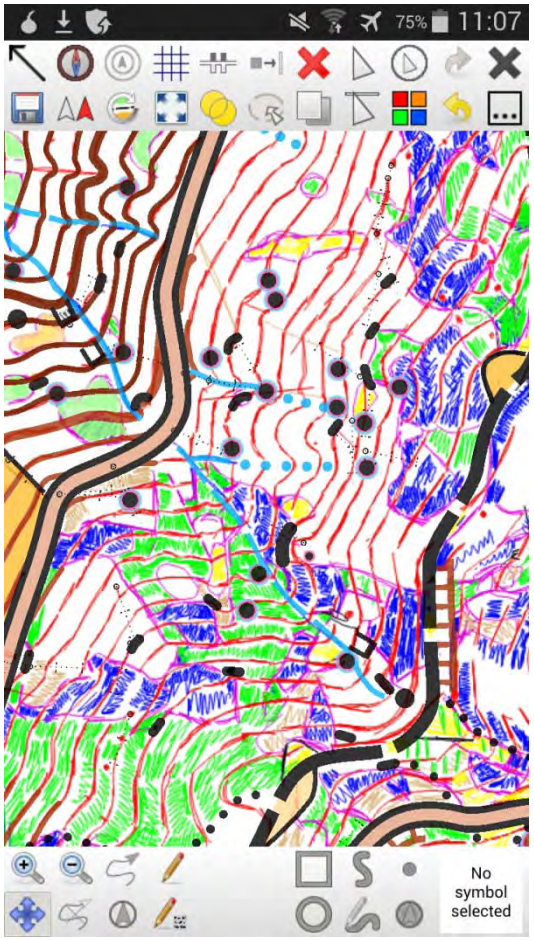
On site cartography

- Modification of field symbols to spot and solve cartographic conflicts right away.
- Live section with demonstration of usage of these symbols
- Which of the four cliffs down to the right is to short? ☺



Hybridal mapping

- A speciality of Mapper is the possiblity to sketch
- Very good for large objects which are to be developped over longer time
- Larger vegetations features
- Contour lines
- These features should be digitized on Desktop when final shape is known

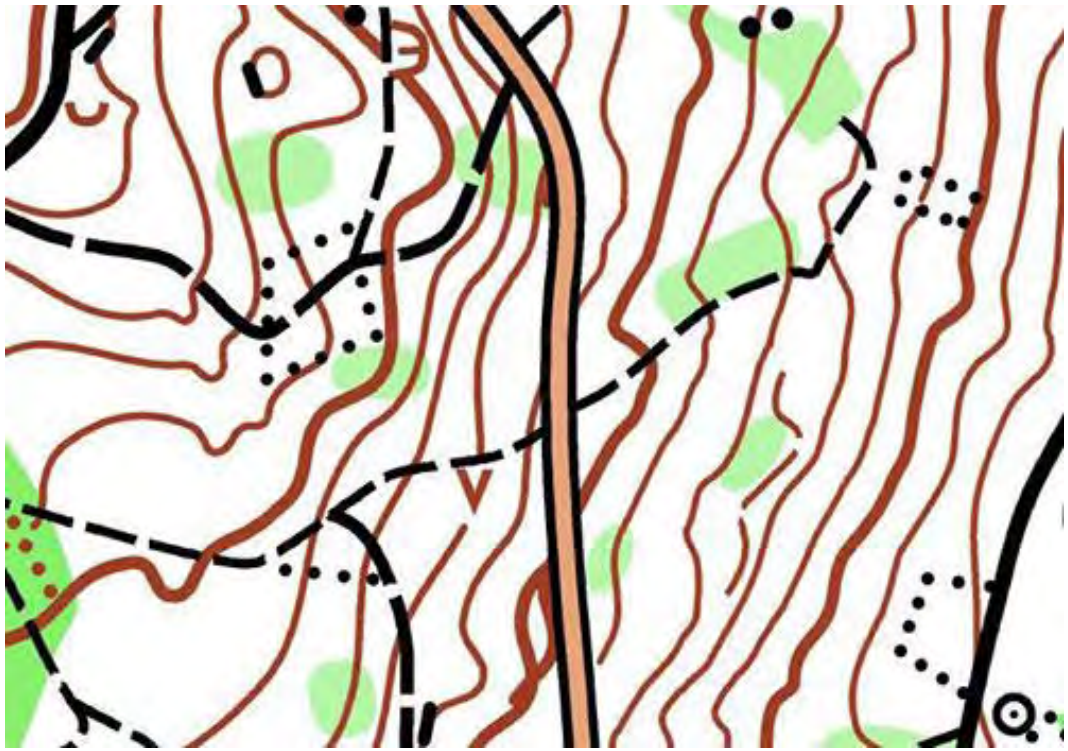


Hybridal mapping

- Sketching

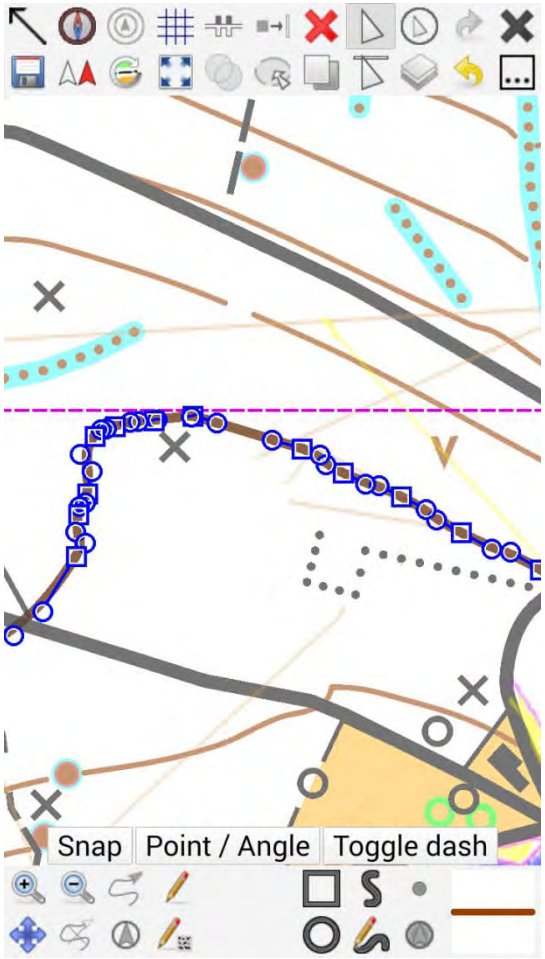
Hybridal mapping

- Effect of desktop vs. tablet on contour drawing
- Left: desktop; right: tablet in terrain
- Left: calm, minimal number of vertices
- Right: shaky contours, excess of vertices



Hybridal mapping

- Second example: excess of vertices



Fieldwork ratio

- Mapping is tranfered to the terrain. My work on desktop-ratio
  Degraded from about 25% to 10%
- Unsure on overall mapping time
- Working on more unstable weather conditions
- Not always the same fun ☺

Mapper and OCAD

- Most customers demand the map to be in OCAD
- Mapper can import all kind of OCAD files
- Mapper can export OCAD8 files
    - Thus no virtual gaps
    - No timestamps
    - limitations with combined symbols
- Small differences in interpretation of ISOM in regard of dashing
- If aware of the possible conflicts it is no problem of mapping an OCAD-compatible map with Mapper
- Draw real gaps
- Set dash vertices explictly

open orienteering

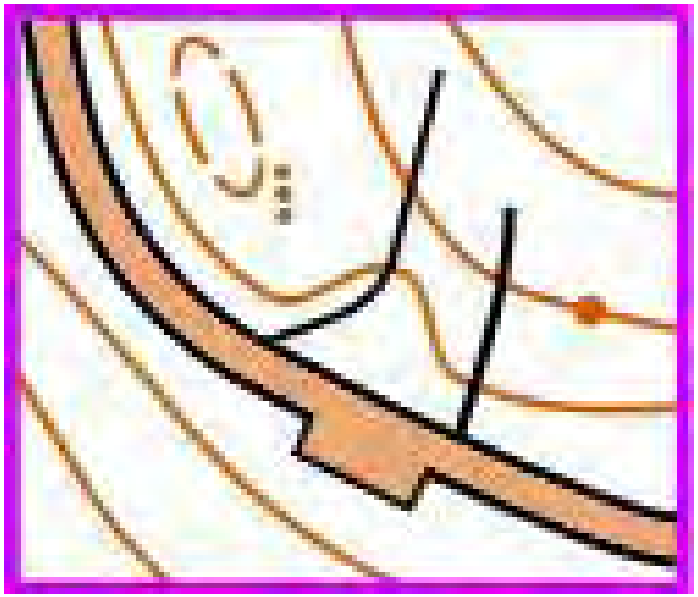
OCAD

the smart software for cartography

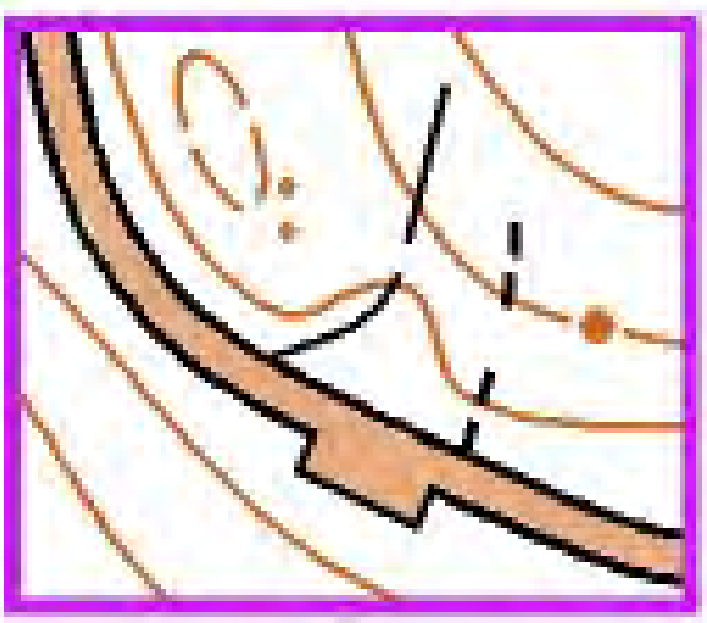
Mapper and OCAD

- Example: no virtual gap in Mapper
- Different dashing between OCAD and Mapper

Mapper



OCAD 12



Summary

- Mapper is Open Source/free
- Restraint in scope on mapping for orienteering
- No restraints inside the scope
- Perfect tool for beginners and core-mappers

- The Android version is optimized for field work
- low budget
- makes localisation easy
- leads to better cartography
- leads to better drawing
- shifts mapping to an all-weather outdoor job

- Interplay with OCAD can be establish with a little bit of awareness of their small and little differences